WHAT IS CLAIMED IS:

1. A method for deprotecting reaction sites on a substrate comprising the steps of:

providing a substrate having protected reaction sites;

modulating light direction with a spatial light modulator so as to generate a predetermined light pattern used for deprotecting selected portions of said protected reaction sites.

2. The method of claim 1, further comprising the step of directing light from a light source to said spatial light modulator.

3. The method of claim 2, further comprising the step of projecting said predetermined light pattern onto a surface of said substrate with a lens.

4. The method of claim 3, further comprising the step of transmitting said predetermined light pattern from said lens through a micro-lens array.

7. 5. The method of claim 2, further comprising the step of transmitting said predetermined light pattern through an array of non-imaging light concentrators.

5. 6. The method of claim 4, further comprising the step of moving said substrate with a translation stage.

8. 7. The method of claim 2, wherein said spatial light modulator is a micro-mirror array.

9. 8. The method of claim 7, wherein said spatial light modulator is a DMD™.

10. 9. The method of claim 2, wherein said spatial light modulator is a GLV™.

6. 10. The method of claim 4, wherein said spatial light modulator is a SVGA DLP™.

11. The method of claim 1, further comprising the step of generating a computer file that specifies, for each photolithography step, which portions of said spatial light modulator will operatively illuminate which portions of said protected reaction sites.

12. The method of claim 11, further comprising the step of programming said spatial light modulator to a desired configuration with information contained in said computer file.

13. A method of deprotecting reaction sites on a substrate comprising:

providing a substrate having protected reaction sites;

providing a light source;

providing a spatial light modulator;

orienting said substrate, said light source, and said spatial light modulator such that when said light source illuminates, intensity of illumination from said light source is modulated by said spatial light modulator and generates a predetermined light image pattern; and

illuminating said substrate with said predetermined light image pattern at said substrate so as to deprotect at least one of said protected reaction sites.

14. The method of claim 13, further comprising the step of projecting said predetermined light pattern onto a surface of said substrate with a lens.

15. The method of claim 14, further comprising the step of transmitting said predetermined light pattern from said lens through a micro-lens array.

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16. The method of claim 13, further comprising the step of transmitting said predetermined light pattern through an array of non-imaging light concentrators.

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17. The method of claim 15, further comprising the step of moving said substrate with a translation stage.

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18. The method of claim 13, wherein said spatial light modulator is a micro-mirror array.

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19. The method of claim 18, wherein said spatial light modulator is a DMD™.

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20. The method of claim 13, wherein said spatial light modulator is a GLV™.

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21. The method of claim 15, wherein said spatial light modulator is a SVGA DLP™.

22. The method of claim 13, further comprising the step of generating a computer file that specifies, for each photolithography step, which portions of said spatial light modulator will operatively illuminate which portions of said protected reaction sites.

23. The method of claim 22, further comprising the step of programming said spatial light modulator to a desired configuration with information contained in said computer file.

24. An optical lithography system, consisting essentially of:

a light source;

a substrate mount; and

a means for dynamically defining a light pattern using unpatterned light from said light source without using a photomask.

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25. The optical lithography system of claim 24, wherein said means for dynamically defining a light pattern includes a spatial light modulator module modulating light direction or light intensity to generate a predetermined light image.

26. The optical lithography system of claim 24, wherein said means for dynamically defining a light pattern includes a micro-mirror array modulating light by changing angular position of micro-mirrors in said micro-mirror array.

27. The optical lithography system of claim 25, wherein said spatial light modulator is a DMD™.

28. The optical lithography system of claim 25, wherein said spatial light modulator is a GLV™.

29. The optical lithography system of claim 25, wherein said spatial light modulator is a SVGA DLP™.

30. The optical lithography system of claim 29, wherein said light source includes an arc lamp.

31. The optical lithography system of claim 26, wherein said micro-mirror array includes a plurality of micro-mirrors, each of said micro-mirrors selectively illuminate a single feature on a substrate using specular reflection of light directed toward said substrate

(turn on), and selectively not illuminating of said single feature by specular reflection of light directed away from said substrate (turn off).

32. An optical lithography system, comprising:

a spatial light modulator which provides a predetermined two dimensional light pattern on a substrate without use of a photomask and holographic image.

33. The optical lithography system of claim 32, wherein said predetermined two dimensional light image is used for deprotecting reaction sites of a polymer array.

34. The optical lithography system of claim 33, further comprising a light source.

35. The optical lithography system of claim 34, wherein said light source includes an arc lamp.

36. The optical lithography system of claim 35, wherein said spatial light modulator includes a micro-mirror array modulating light by changing angular position of micro-mirrors in said micro-mirror array.